# Subsea Valve Actuation Systems Multiple Products • Varied Applications • Any Depth

## **Multiple Products from Emerson's Subsea Leaders**

Bettis, Dantorque and Shafer - Three familiar brands that have proven their reliability for decades in the offshore industry. They are all part of Emerson's comprehensive offering of solutions for rugged subsea service. Together, they provide a choice of proven technologies, suitable for any requirement in this harsh environment at virtually any water depth. These pioneering brands bring unparalleled subsea experience. They are available for subsea applications, for ultra-deep actuation or for an engineered solution. All from a single source – Emerson.



# **BETTIS**<sup>™</sup>

The symmetrical scotch yoke mechanism provides quarter-turn rotation. GS-Series actuators are available with diver or ROV intervention systems. The actuators are well suited for riser and other fail-safe applications.



#### **DANTORQUE**

Dantorque actuators produce quarter-turn rotation based on the helical spline operating principle. The actuators are compact, concentric and produce perfectly balanced torque to the valve stem. Dantorque actuators are customized for ROV intervention and installation or retrieval at ultra deep water depths. These actuators are ideal for SSIV, highly engineered, and especially critical valve applications.

Dantorque planetary gear operators are compact and designed for ultra deep water. The concentric gear operator produces balanced torque and is designed for ROV intervention.



# SHAFER

Shafer rotary vane actuators produce balanced quarter-turn torque without the need for any internal gearing or power conversion mechanism. The actuator is extremely efficient and compact, and does not require pressure compensation. The rotary vane actuators are excellent for manifold and other tight space applications.

# A Wide Variety of Configurations and Solutions

Our experienced subsea team will help provide the optimal solution for each application. Selecting the best product may mean offering a low cost solution for a subsea application or reducing the size and weight of an installation skid. We are dedicated to assist you with our diverse range of products and our extensive knowledge base.

All of the actuator types can be made to order for project specific requirements.

- Mechanical or hydraulic override
- Remote valve position feedback
- ROV or diver compatible control panels
- Deep water installation and retrieval system
- Interchangeability between actuators
- Compatibility with custom running tools
- Integrated electronic controls for precise valve positioning



Rotary vane double-acting actuator



Dantorque spring-return and running tool



Compact spring-return actuators for tight space applications



Compact rotary vane in a subsea template



Gear operators with reach rods in a subsea manifold



Hyperbaric Testing

# A World of Experience

With our three product brands, Emerson has more than 75 years of combined production experience in serving the subsea industry. We have a field-proven tract record with subsea valve actuation beginning in the year 1974. Our milestones stand out.

- The first company to supply subsea actuation into the North Sea after Piper Alpha
- · The first company to supply actuators with full ROV installation, retrieval and override capability
- The first company to supply subsea actuators with integrated hydraulics as well as electronics for valve control by means of a bus communication signal
- We have equipment qualified for installation at depths of 12,500 feet
- An installed base encompassing more than 1,400 different project sites for more than 55 major, independent and national oil companies
  around the globe

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This product is only intended for use in large-scale fixed installations excluded from the scop of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2).

For more information, please contact subsea@emerson.com

For complete list of sales and manufacturing sites, please visit www.emerson.com/actuationtechnologieslocations or contact us at info.actuationtechnologies@emerson.com

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